## SEQUENCE LISTING

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gccgg	acaa	ac a	atg g	gag g	gca g	gcg (	ccg (	ccc g	ggg (	ccg o	ccg 1	egg (	ccg (	ctg (	ctg	109
		I	Met (	3lu A	Ala A	Ala 1	Pro 1	Pro (	3ly 1	Pro 1	Pro '	rp :	Pro 1	Leu 1	Leu	
		_	L				5					LO				
ctg																157
Leu I	ьеи 15	Leu	Leu	Leu	Leu	ьеu 20	AIa	Leu	Cys	GIY	Cys 25	Pro	Ala	Pro	Ala	
gcg g		t.ca	cca	ata	cta		ttt	acc	aac	cac		gac	αta	caa	cta	205
Ala																200
30					35					40	3	E		3	45	
gtg g	gac	gcc	ggc	gga	gtc	aag	ctg	gag	tcc	acc	atc	gtg	gtc	agc	ggc	253
Val 2	Asp	Ala	Gly	Gly	Val	Lys	Leu	Glu	Ser	Thr	Ile	Val	Val	Ser	Gly	
				50					55					60		
ctg g														_	-	301
Leu	Glu	Asp		Ala	Ala	Val	Asp		Gln	Phe	Ser	Lys	_	Ala	Val	
			65					70					75			

			-		_	gag Glu		_		_	_			_		349
-	_		_	-		cag Gln 100		-	_				_	-		397
						gac Asp	-			_	_	_			-	445
						atc Ile										493
	-					cag Gln	-		-	_	_		_		_	541
						tac Tyr					_				_	589
						999 Gly 180										637
						tgg Trp							_	_		685
						gct Ala		_	_		_				_	733
						ttc Phe					_	_		-	_	781
						acg Thr										829
						atc Ile 260										877
_		_	_		_	agt Ser	_					_	_		_	925
						cag Gln										973
_				_		cac His	_	-	_	_			_			1021
						ccc Pro										1069
						gcc Ala			_			_	-			1117

	335					340					345					
acg	gac	cta	cgg	agg	atc	tcg	ctg	gac	acg	ccg	gac	ttc	acc	gac	atc	1165
Thr	Asp	Leu	Arg	Arg	Ile	Ser	Leu	Asp	Thr	Pro	Asp	Phe	Thr	Asp	Ile	
350					355					360					365	
	_	_	_	-	gac				-		-		-		_	1213
Val	Leu	Gln	Val	_	Asp	Ile	Arg	His		Ile	Ala	Ile	Asp	_	Asp	
~~~	a+ a	~~~	~~~	370	~+~				375		~~~			380		1061
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110	Дец	GIU	385	TYL	Vai	TYL	1112	390	ASP	ASP	GIU	vai	395	AIG	110	
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					Asp											
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gag	atc	aac	gac	ccc	gat	ggc	atc	gcg	gtc	gac	tgg	gtg	gcc	cga	aac	1357
Glu	Ile	Asn	Asp	Pro	Asp	Gly	Ile	Ala	Val	Asp	Trp	Val	Ala	Arg	Asn	
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					acg				-				_	_		1405
	Tyr	Trp	Thr	Asp	Thr	GLY	Thr	Asp	Arg		GIu	Val	Thr	Arg		
430	~~~	200	+ a a	~~~	435	2+0	a+a	~+~	+ ~~	440	~~~		~~~	~~~	445	1453
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ASII	Gry	1111	JCI	450	шуз	110	БСС	vai	455	Gru	Hop	Бец	мар	460	FIO	
cqa	qcc	atc	qca		cac	ccc	ata	atq		ctc	atq	tac	taa		gac	1501
					His		_	-			_				-	
			465					470	_			-	475		_	
tgg	gga	gag	aac	cct	aaa	atc	gag	tgt	gcc	aac	ttg	gat	ggg	cag	gag	1549
Trp	Gly		Asn	Pro	Lys	Ile		Cys	Ala	Asn	Leu	_	Gly	Gln	Glu	
		480	_				485					490				. 202
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Arg	495	vai	Leu	vai	Asn	500	ser	Leu	GIY	Trp	505	ASN	GIY	ьеu	АТА	
cta		cta	cad	gag	ggg		ctc	tac	taa	gga		acc	aaσ	aca	gac	1645
					Gly						_	_	-		-	1045
510					515	-3		- 4 -		520	<b>L</b>		-1-		525	
aag	atc	gag	gtg	atc	aat	gtt	gat	ggg	acg	aag	agg	cgg	acc	ctc	ctg	1693
Lys	Ile	Glu	Val	Ile	Asn	Val	Asp	Gly	Thr	Lys	Arg	Arg	Thr	Leu	Leu	
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Glu	Asp	Lys		Pro	His	Ile	Phe	_	Phe	Thr	Leu	Leu	_	Asp	Phe	
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тте	ıyr	560	Thr	Asp	Trp	GIN	Arg 565	Arg	ser	TTE	GIu	Arg 570	vaı	His	гуз	
atc	aaπ		agg	caa	gac	ata		att	asc	cad	cta		asc.	cta	ata	1837
					Asp											1037
	575		~	3		580					585			204		
ggg		aaa	gct	gtg	aat		gcc	aag	gtc	gtc		acc	aac	ccq	tgt	1885
					Asn											
590					595					600	_				605	
gcg	gac	agg	aac	ggg	ggg	tgc	agc	cac	ctg	tgc	ttc	ttc	aca	ccc	cac	1933

Ala Ası	Arg	Asn	Gly 610	Gly	Cys	Ser	His	Leu 615	Cys	Phe	Phe	Thr	Pro 620	His	
gca aco															1981
aag acc	-					_		_	_			_	_	_	2029
gcc ato Ala Ile 659	His														2077
ccg ctc Pro Let	_		_	_		_		_	_	_		_			2125
aac aac Asn Asr								_	_	_			_	_	2173
gcc tto Ala Phe															2221
gac tad Asp Tyr											_				2269
tgg gcd Trp Ala	Asp														2317
cag tto Gln Phe 750															2365
ctg gcc Leu Ala															2413
ggc aag Gly Lys															2461
acg cto					-		_		_				_		2509
gct gad Ala Asp 815	Gln														2557
tcg tcc Ser Ser 830															2605
ccg cac														aca	2653
gac tgg Asp Trp			cac					gcc					ggc		2701

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_	_		_			tac Tyr		_	_		_	-	_		_	2893
_	-					ttg Leu	_		-	-			_		_	2941
	_		-	-	-	cag Gln		-	_	-			_		_	2989
					-	aaa Lys 980	-		-		-		_	_	-	3037
					_	Gly	_	_			Lys	_	_	_	_	3085
_			_		Phe	gtt Val	_			Leu	_				Asn	3133
				Pro		gac Asp		_	Ile				_	Arg		3181
		Trp	Thr			gcc Ala		Asn				_	His		_	3229
200		1040	)									1030	,			
		gaa Glu	gcc			gtg Val 1060	Val					cgc Arg	gac			3277
Ser agg	Gly 1055 gcc Ala	gaa Glu S atc	gcc Ala gtc	Met gtc	Gly aac	Val 1060 gcg Ala	Val ) gag	Leu cga	Arg 999	Gly tac	Asp 1065 ctg Leu	cgc Arg tac	gac Asp ttc	Lys acc	Pro	3277 3325
agg Arg 1070	Gly 1055 gcc Ala ) cag	gaa Glu atc Ile gac	gcc Ala gtc Val	Met gtc Val gca	aac Asn 1075 gcc Ala	Val 1060 gcg Ala	Val gag Glu atc	Leu cga Arg gaa	Arg ggg Gly cgc	tac Tyr 1080 gca Ala	Asp 1065 ctg Leu ) gcc	cgc Arg tac Tyr	gac Asp ttc Phe gac	Lys acc Thr	Pro aac Asn 1085 acc Thr	
agg Arg 1070 atg Met	Gly 1055 gcc Ala ) cag Gln	gaa Glu atc Ile gac Asp	gcc Ala gtc Val cgg Arg	Met gtc Val gca Ala 1090 ctc Leu	aac Asn 1075 gcc Ala ttc	Val 1060 gcg Ala aag	Val gag Glu atc Ile	cga Arg gaa Glu	ggg Gly cgc Arg 1095 ctc Leu	tac Tyr 1080 gca Ala	Asp 1065 ctg Leu ) gcc Ala	cgc Arg tac Tyr ctg Leu	gac Asp ttc Phe gac Asp	Lys acc Thr ggc Gly 1100 gcc Ala	Pro aac Asn 1085 acc Thr	3325
agg Arg 1070 atg Met gag Glu gtg Val	Gly 1055 gcc Ala ) cag Gln cgc Arg gtg Val	gaa Glu atc Ile gac Asp Glu gac Asp	gcc Ala gtc Val cgg Arg gtc Val 1105 aac Asn	gtc Val gca Ala 1090 ctc Leu aca Thr	aac Asn 1075 gcc Ala ) ttc Phe ctg Leu	Val 1060 gcg Ala aag Lys acc Thr	Val gag Glu atc Ile acc Thr aag Lys 1125	cga Arg gaa Glu ggc Gly 1110 ctg Leu	ggg Gly cgc Arg 1095 ctc Leu ttc Phe	tac Tyr 1080 gca Ala atc Ile tgg	Asp 1065 ctg Leu ) gcc Ala cgc Arg gtg Val	cgc Arg tac Tyr ctg Leu cct Pro gac Asp	gac Asp ttc Phe gac Asp gtg Val 1115 gcg Ala	Lys acc Thr ggc Gly 1100 gcc Ala gac Asp	Pro aac Asn 1085 acc Thr ctg Leu ctg Leu	3325 3373
agg Arg 1070 atg Met gag Glu gtg Val	Gly 1055 gcc Ala ) cag Gln cgc Arg gtg Val	gaa Glu atc Ile gac Asp Glu gac Asp 1120 att	gcc Ala gtc Val cgg Arg gtc Val 1105 aac Asn	Met gtc Val gca Ala 1090 ctc Leu aca Thr	aac Asn 1075 gcc Ala ) ttc Phe ctg Leu	Val 1060 gcg Ala aag Lys acc Thr	yal gag Glu atc Ile acc Thr aag Lys 1125 ctg	cga Arg gaa Glu ggc Gly 1110 ctg Leu tca	ggg Gly cgc Arg 1095 ctc Leu ttc Phe	tac Tyr 1080 gca Ala atc Ile tgg Trp	Asp 1065 ctg Leu gcc Ala cgc Arg gtg Val	cgc Arg tac Tyr ctg Leu cct Pro gac Asp 1130 cgc	gac Asp ttc Phe gac Asp gtg Val 1115 gcg Ala	Lys acc Thr ggc Gly 1100 gcc Ala gac Asp	Pro aac Asn 1085 acc Thr ctg Leu ctg Leu	3325 3373 3421

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Glu Asp Ala Asn		_	ı Thr Ile Leu Gly Lys	
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				3613
His Leu Tyr Trp			: Ile Glu Arg Val Glu	
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		-	n Gly Arg Val Ala His	
1185		1190	1195	
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			Leu Glu Phe Ser	
1200	120		1210	2050
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1215	1220	n GIA GIA CAR	S Ser His Ile Cys Ile 1225	
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			c cca gtc cac ctc gtg 386 s Pro Val His Leu Val	3805
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			•	3853
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204 204 0211 11211	1250	1255	1260	
gac cag ttt gca				3901
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1265		1270	1275	
tgg cgc tgt gac	ggc ttt ccc gag	g tgc gat gac	c cag age gae gag gag 394	3949
			Gln Ser Asp Glu Glu	
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Gly Cys Pro Val	Cys Ser Ala Ala	a Gln Phe Pro	Cys Ala Arg Gly Gln	
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Arg Ser Asp Glu		_	Leu Pro Asn Gln Phe	
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		•	: Gly Gly Val Tyr Phe	7203
1390	1395	1400		
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333 232 003 090	3-3 3-3 -3- cas	, -50 000 909	, 555 500 440 555 000 455	J J J

Val Cy	s Gln	Arg	Val	Val	Cys	Gln	Arg	Tyr	Ala	Gly	Ala	Asn	Gly	Pro		
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ttc cc	g cac	gag	tat	gtc	agc	ggg	acc	ccg	cac	gtg	CCC	ctc	aat	ttc	4	381
Phe Pr	o His	Glu	Tyr	Val	Ser	Gly	Thr	Pro	His	Val	Pro	Leu	Asn	Phe		
		142	5				1430	)				1435	5			
ata go	c ccg	ggc	ggt	tcc	cag	cat	ggc	ccc	ttc	aca	ggc	atc	gca	tgc	4	429
Ile Al	a Pro	Gly	Gly	Ser	Gln	His	Gly	Pro	Phe	Thr	Gly	Ile	Ala	Cys		
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gga aa	g tcc	atg	atg	agc	tcc	gtg	agc	ctg	atg	ggg	ggc	cgg	ggc	ggg	4	477
Gly Ly							_	_	_							
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gtg cc	c ctc	tac	gac	cqq	aac	cac	qtc	aca	qqq	qcc	tcq	tcc	aqc	ачс	4	525
Val Pr			_				_			_	_		-	_		
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tcg tc	c agc	acq	aaσ			cta	tac	cca			cta	aac	cca		4	573
Ser Se			_	-	_	_		_	_		_		_	_	_	
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ccc tc	c cca	acc			ccc	taa	cta			atα	gac	atα			4	621
Pro Se															•	~~-
110 00		150				501	1510	_	11011		пор	1519		- 7 -		
tct tc	a aac			acc	act	aca			tac	add	ccc			att	4	669
Ser Se															-	005
DCI DC	152		110	AIU	1111	1525	_	110	1 y 1	Arg	1530	-	110	110		
cga gg			ccc	cca	200			tac	200	200			tat	asa.	1	717
Arg Gl					_	_		_	-		_		_	_	7	, _ ,
_	35	ALG	110	110	1540		110	Cys	DCI	1549	_	val	Cys	rob		
agc ga		add	acc	agg		-	220	acc	age			tac	cta	rat	1	765
Ser As															7	703
1550	P IYI	DCI	Ата	1559	_	115	цуз	AIG	1560	_	TYL	TYT	ьeu	1565		
ttg aa	c tca	as a	tca			tat	cca	ccc			200	<b>CCC</b>	C2.C		1	813
Leu As											_			_	4	013
Leu As	n ser	Asp	1570	_	PIO	TYL	PIO	1575		PIO	TIII	PIO	1580			
gag ta	a ata	+ ~~			~~~	200	+~~			+ ~~		~~~			4	061
cag ta															4	861
Gln Ty	т пец	158		GIU	Asp	ser	1590		PIO	ser	PIO	1595		GIU		
200 20	a +aa			ata	++~	~~~			~~~					~~~	4	000
agg ag						_			_			_	_	-	4.	909
Arg Se	160		птъ	цец	PHE	1609		PIO	PIO	ser		_	1111	Asp		
tan ta		-		~~~~					- ~+-		1610				4	065
tca tc Ser Se		cere	gge c	eggge	caci	حن دو	gect	ctet	. gre	jecec	etgt	aaat	agti	נכנ	4:	965
16						. 4. 4	<b>.</b>	<b></b>					. <b></b>		_	00-
aaatatg		_					_									025
taaaaac									igg 9	getge	gaga	ia ct	ctgt	acag		085
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ctg ctg d									157
Leu Leu I	Leu Leu	Leu Leu	Leu Ala	Leu Cy	s Gly Cy	ys Pro A	Ala Pro	Ala	
15			20		25	_			
gcg gcc t									205
Ala Ala S	Ser Pro		Leu Phe	Ala Ası	_	rg Asp V	Val Arg		
30		35			40			45	
gtg gac g							_		253
Val Asp A	Ala Gly		гуз гет		r Thr 11	te Vai V		GIA	
ata asa s	~~+ ~~~	50		55			60		201
ctg gag g								_	301
Leu Glu A	65	AIA AIA	vai Asi	70	i Pile Se	_	эгу Ага 75	val	
tac tgg a		ata aac	gag gag		r aan ca		_	aac	349
Tyr Trp 1				_	_	-	_		343
	80	501	85		- <u>-</u> - 7 - 0 -	90	.y. Deu		
cag acg		acc ata		ata ata	atc to		eta atc	tct	397
Gln Thr									
95	_		100		10	-			
ccc gac g	ggc ctc	gcc tgc	gac tgg	gtg ggd	aag aa	g ctg t	ac tgg	acg	445
Pro Asp (									
110		115			120			125	
gac tca g									493
Asp Ser (	Glu Thr		Ile Glu	Val Ala	a Asn Le	eu Asn G	3ly Thr	Ser	
		130		139			140		
cgg aag g									541
Arg Lys V		Phe Trp	GIn Asp		Gln Pr	_		Ala	
++	145			150		_	L55		500
ttg gac o Leu Asp I									589
	160 AIA	nis Giy	191 Mec		) IIII AS	170 v	ar Gru	THE	
ccc cgg a		caa acs			י פתר פר		ar atr	att	637
Pro Arg 1									037
175			180	op Gi	18	_	Jyb IIC	110	
gtg gac t	tcq qac	att tac		aat gga			ac cta	gag	685
Val Asp S									
190	-	195	-	•	200		•	205	
gag cag a	aag ctc	tac tgg	gct gac	gcc aag	ctc ag	c ttc a	tc cac	cgt	733
Glu Gln I				_	_			_	
		210		215			220		
gcc aac c	ctg gac	ggc tcg	ttc cgg	cag aag	gtg gt	g gag g	gc agc	ctg	781
Ala Asn I									
	225			230		2	235		
acg cac c					_	_			829
Thr His F	Pro Phe	Ala Leu	Thr Leu	Ser Gly	Asp Th	ır Leu T	yr Trp	Thr	
2	240		245			250			

gac	tgg	cag	acc	cgc	tcc	atc	cat	gcc	tgc	aac	aag	cgc	act	ggg	ggg		877	
Asp	$\mathtt{Trp}$	Gln	Thr	Arg	Ser	Ile	His	Ala	Cys	Asn	Lys	Arg	Thr	Gly	Gly			
	255					260					265							
_	agg	_			_	_	-					_	_		_		925	
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270					275					280					285			
	ctg												_	_			973	
vai	Leu	ser	GIN		Arg	GIN	Pro	Pne		HIS	Thr	Arg	Cys		GIU			
as a	aat	~~~	~~~	290	taa	<b>a</b> aa	ata	+~~	295	ata	taa	999	200	300	~~+		1001	
	Asn																1021	
пор	ADII	OLY	305	Cys	JCI	1115	LCu	310	цец	пса	Jer	FIO	315	GIU	FIO			
ttc	tac	aca		acc	tac	ccc	acq	-	ata	cag	cta	caq		aac	aac		1069	
	Tyr																	
	-	320	•		•		325	•				330	-					
agg	acg	tgt	aag	gca	gga	gcc	gag	gag	gtg	ctg	ctg	ctg	gcc	cgg	cgg		1117	
Arg	Thr	Cys	Lys	Ala	Gly	Ala	Glu	Glu	Val	Leu	Leu	Leu	Ala	Arg	Arg			
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	gac																1165	
	Asp	Leu	Arg	Arg		Ser	Leu	Asp	Thr	Pro	Asp	Phe	Thr	Asp				
350					355					360					365			
	ctg																1213	
vai	Leu	GIn	vaı		Asp	IIe	Arg	His		IIe	Ala	Ile	Asp	_	Asp			
000	ata	~~~	~~~	370	at a	+	+~~		375	~~~				380			1061	
	cta Leu															•	1261	
		Olu	385	- 7 -	var	- 7 -	111	390	изъ	ASP	GIU	vai	395	AIG	116			
cqc	agg	aca		ctq	qac	aaa	tct		aca	caq	acq	cta		aac	acc		1309	
	Arg															•		
		400				_	405	_				410						
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Glu	Ile	Asn	Asp	Pro	Asp		Ile	Ala	Val	Asp	${\tt Trp}$	Val	Ala	Arg	Asn			
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	Tyr	Trp	Thr	Asp		GIY	Thr	Asp	Arg		Glu	Val	Thr	Arg				
430	~~~	200	+	~~~	435	a+ a	~+~	~		440					445		1.450	
	ggc Gly			_	_		_		_		_	_	_				1453	
ASII	Gry	1111	Ser	450	цуѕ	TIE	ьеu	vai	455	GIU	Asp	ьeu	Asp	460	Pro			
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	Ala																1301	
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	Gly																	
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Arg	Arg	Val	Leu	Val	Asn	Ala	Ser	Leu	Gly	Trp	Pro	Asn	Gly	Leu	Ala			
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	gac																1645	
Leu	Asp	Leu	Gln	Glu	Gly	Lys	Leu	Tyr	Trp	Gly	Asp	Ala	Lys	Thr	Asp			

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Lys	Ile	Glu	Val		Asn	Val	Asp	Gly		Lys	Arg	Arg	Thr		Leu		
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GIU	Asp	гуѕ		PIO	HIS	Ile	Pne	-	Pne	Thr	Leu	Leu	_	Asp	Pne		
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						cag	_		_						_		1789
TTE	туг	_	Thr	Asp	Trp	Gln	_	Arg	ser	TTE	GIU	_	val	HIS	гÀг		
~+~		560		~~~	~~~	~+~	565					570					1007
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Val	575	Ата	ser	Arg	Asp	Val 580	TIE	TTE	Asp	GIII	585	Pro	Asp	ьeu	Met	•	
~~~		222	~a+	~+~	22+	gtg	~~~	224	a+ a	~+ a		200	222	~~~			1005
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590	пеп	цув	Ата	vaı	595	vaı	Ата	пуъ	vai	600	GIY	1111	ASII	PIO	605		
	asc	agg	220	aaa		tac	200	cac	ata		++~	++-	202	000			1022
						tgc Cys	_		_	_						,	1933
AIG	дад	Arg	ASII	610	GLY	Cys	Ser	1112	615	Cys	FIIC	FIIC	TIIL	620	nis		
aca	acc	caa	tat		tac	ccc	ata	aaa		asa	cta	ata	act		ata		1981
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niu	****	9	625	CLY	Cys	110	110	630	LCu	GIU	пец	пец	635	Asp	Mec		
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<b>1</b> ,5	1111	640		val	110	O_Lu	645	1110	шси	Val	1110	650	SCI	nr 9	AIG		
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cca		acq	aac	atc	aaq	gag	acc	tca	acc	cta		ttt	gat.	ata	t.cc		2125
						Glu							_				
670			•		675					680	-		_		685		
aac	aac	cac	atc	tac	tgg	aca	qac	qtc	aqc	ctq	aaq	acc	atc	agc			2173
						Thr											
				690	-		_		695		-			700	•		
gcc	ttc	atg	aac	ggg	agc	tcg	gtg	gag	cac	gtg	gtg	gag	ttt	ggc	ctt		2221
						Ser											
			705					710					715				
gac	tac	ccc	gag	ggc	atg	gcc	gtt	gac	tgg	atg	ggc	aag	aac	ctc	tac		2269
Asp	Tyr	${\tt Pro}$	Glu	Gly	Met	Ala	Val	Asp	Trp	Met	Gly	Lys	Asn	Leu	Tyr		
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Trp	Ala	Asp	Thr	Gly	Thr	Asn	Arg	Ile	Glu	Val	Ala	Arg	Leu	Asp	Gly		
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	Phe	Arg	Gln	Val		Val	$\mathtt{Trp}$	Arg	Asp	Leu	Asp	Asn	Pro	Arg	Ser		
750					755					760					765		
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Leu	Ala	Leu	Asp		Thr	Lys	Gly	Tyr		Tyr	Trp	Thr	Glu	_	Gly		
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ggc	aag	ccg	agg	atc	gtg	cgg	gcc	ttc	atg	gac	ggg	acc	aac	tgc	atg		2461

Gly	Lys	Pro	Arg 785	Ile	Val	Arg	Ala	Phe 790	Met	Asp	Gly	Thr	Asn 795	Cys	Met	
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-		_				acg Thr	_		_	_						2653
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Ser Gly Glu Ala	=	_	Gly Asp Arg	Asp Lys Pro	
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Arg Ala Ile Val		Glu Arg Gly			
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Met Gln Asp Arg	=	_			
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Glu Arg Glu Val		-	ile Arg Pro		
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His Leu Tyr Trp					0020
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Lys Thr Thr Gly		-			
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Leu Thr Gly Ile	His Ala Val	Glu Glu Val	Ser Leu Glu	Glu Phe Ser	
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Ala His Pro Cys	Ala Arg Asp	Asn Gly Gly	Cys Ser His	Ile Cys Ile	
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Ala Lys Gly Asp		Arg Cys Ser		His Leu Val	
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Leu Leu Gln Asn				-	
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Asp Gln Phe Ala	_	_	Asp Cys Ile	-	
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Cys Val Asp Leu					4045
Clo for year	ary neu ary	che wah già	ora vra veb	cya Gin Mah	

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Arg Ser Asp G	lu Val Asp	Cys Asp	Ala Ile	Cys Let	ı Pro Asn	Gln	Phe	
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Arg Cys Ala Se	er Gly Gln	Cys Val	Leu Ile	Lys Glr	n Gln Cys	Asp	Ser	
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Phe Pro Asp C								
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Lys Pro Pro Se		_	-		_			
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Val Cys Gln A								1000
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Phe Pro His G								1301
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Ile Ala Pro G		_				_	_	1127
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Gly Lys Ser Me				_				<b>44</b> //
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Val Pro Leu Ty								4323
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tcg tcc agc ac			tac cco		r cta aac	cca		4573
Ser Ser Ser Th					_	_	_	43/3
ber ber ber 11	1490	IIII LCu	149		. Dea Asii	1500		
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Pro Ser Pro Al				_				1021
	505	110 501	1510	11011 1100	. 7.5p 7.60 151!		- / -	
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Ser Ser Asn I								4007
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Arg Gly Met Al								4/1/
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Ser Asp Tyr Se			гуз нта	_	TYP TYP		_	
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Leu Asn Ser As		Pro Tyr			Inr Pro			
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                                               1610
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Ser Ser
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Gly Gly Val Lys Leu Glu Ser Thr Ile Val Val Ser Gly Leu Glu Asp
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Ala Ala Val Asp Phe Gln Phe Ser Lys Gly Ala Val Tyr Trp Thr
Asp Val Ser Glu Glu Ala Ile Lys Gln Thr Tyr Leu Asn Gln Thr Gly
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Ala Ala Val Gln Asn Val Val Ile Ser Gly Leu Val Ser Pro Asp Gly
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Leu Ala Cys Asp Trp Val Gly Lys Lys Leu Tyr Trp Thr Asp Ser Glu
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Thr Asn Arg Ile Glu Val Ala Asn Leu Asn Gly Thr Ser Arg Lys Val
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Leu Phe Trp Gln Asp Leu Asp Gln Pro Lys Ala Ile Ala Leu Asp Pro
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Ala His Gly Tyr Met Tyr Trp Thr Asp Trp Gly Glu Thr Pro Arg Ile
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Glu Arg Ala Gly Met Asp Gly Ser Thr Arg Lys Ile Ile Val Asp Ser
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Asp Ile Tyr Trp Pro Asn Gly Leu Thr Ile Asp Leu Glu Glu Gln Lys
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Leu Tyr Trp Ala Asp Ala Lys Leu Ser Phe Ile His Arg Ala Asn Leu
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Asp Gly Ser Phe Arg Gln Lys Val Val Glu Gly Ser Leu Thr His Pro
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Phe Ala Leu Thr Leu Ser Gly Asp Thr Leu Tyr Trp Thr Asp Trp Gln
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250

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Gln Glu Arg Gln Pro Phe Phe His Thr Arg Cys Glu Glu Asp Asn Gly
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Cys Ala Cys Pro Thr Gly Val Gln Met Gln Asp Asn Gly Arg Thr Cys
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Arg Arg Ile Ser Leu Asp Thr Pro Asp Phe Thr Asp Ile Val Leu Gln
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Val Asp Asp Ile Arg His Ala Ile Ala Ile Asp Tyr Asp Pro Leu Glu
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Gly Tyr Val Tyr Trp Thr Asp Asp Glu Val Arg Ala Ile Arg Arg Ala
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Tyr Leu Asp Gly Ser Gly Ala Gln Thr Leu Val Asn Thr Glu Ile Asn
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Asp Pro Asp Gly Ile Ala Val Asp Trp Val Ala Arg Asn Leu Tyr Trp
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Ser Arg Lys Ile Leu Val Ser Glu Asp Leu Asp Glu Pro Arg Ala Ile
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Gln Glu Gly Lys Leu Tyr Trp Gly Asp Ala Lys Thr Asp Lys Ile Glu
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Val Ile Asn Val Asp Gly Thr Lys Arg Arg Thr Leu Leu Glu Asp Lys
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Leu Pro His Ile Phe Gly Phe Thr Leu Leu Gly Asp Phe Ile Tyr Trp
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Thr Asp Trp Gln Arg Arg Ser Ile Glu Arg Val His Lys Val Lys Ala
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Ser Arg Asp Val Ile Ile Asp Gln Leu Pro Asp Leu Met Gly Leu Lys
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Ala Val Asn Val Ala Lys Val Val Gly Thr Asn Pro Cys Ala Asp Arg
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Asn Gly Gly Cys Ser His Leu Cys Phe Phe Thr Pro His Ala Thr Arq
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                                            620
Cys Gly Cys Pro Ile Gly Leu Glu Leu Leu Ser Asp Met Lys Thr Cys
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Ile Val Pro Glu Ala Phe Leu Val Phe Thr Ser Arg Ala Ala Ile His
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Glu Gly Met Ala Val Asp Trp Met Gly Lys Asn Leu Tyr Trp Ala Asp
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Gln Val Leu Val Trp Arg Asp Leu Asp Asn Pro Arg Ser Leu Ala Leu
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Asp Pro Thr Lys Gly Tyr Ile Tyr Trp Thr Glu Trp Gly Gly Lys Pro
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Arg Ile Val Arg Ala Phe Met Asp Gly Thr Asn Cys Met Thr Leu Val
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Asp Lys Val Gly Arg Ala Asn Asp Leu Thr Ile Asp Tyr Ala Asp Gln
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Arg Leu Tyr Trp Thr Asp Leu Asp Thr Asn Met Ile Glu Ser Ser Asn
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Met Leu Gly Gln Glu Arg Val Val Ile Ala Asp Asp Leu Pro His Pro
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Phe Gly Leu Thr Gln Tyr Ser Asp Tyr Ile Tyr Trp Thr Asp Trp Asn
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Leu His Ser Ile Glu Arg Ala Asp Lys Thr Ser Gly Arg Asn Arg Thr
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Leu Ile Gln Gly His Leu Asp Phe Val Met Asp Ile Leu Val Phe His
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Ser Ser Arg Gln Asp Gly Leu Asn Asp Cys Met His Asn Asn Gly Gln
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                                905
Cys Gly Gln Leu Cys Leu Ala Ile Pro Gly Gly His Arg Cys Gly Cys
Ala Ser His Tyr Thr Leu Asp Pro Ser Ser Arg Asn Cys Ser Pro Pro
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Thr Thr Phe Leu Leu Phe Ser Gln Lys Ser Ala Ile Ser Arg Met Ile
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                                        955
Pro Asp Asp Gln His Ser Pro Asp Leu Ile Leu Pro Leu His Gly Leu
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Gln Pro Phe Val Leu Thr Ser Leu Ser Gln Gly Gln Asn Pro Asp Arg
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                                        1035
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                                    1050
                                                        1055
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Val Val Asn Ala 1075	Glu Arg Gly	Tyr Leu 1080	Tyr Phe Thr	Asn Met Gln Asp 1085
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		Trn Val		Leu Lys Arg Ile
Abii iiii bea cij	1125	iip vai	1130	1135
Glas Com Com Nom		77- 7		
				Leu Glu Asp Ala
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	Pro Leu Gly		Ile Leu Gly	Lys His Leu Tyr
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Trp Ile Asp Arg	Gln Gln Gln	Met Ile	Glu Arg Val	Glu Lys Thr Thr
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Ile His Ala Val	Glu Glu Val	Ser Leu	Glu Glu Phe	Ser Ala His Pro
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	=	Asp Cys	_	Ala Trp Arg Cys
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Asp Gly Phe Pro	Glu Cys Asp	Asp Gln	Ser Asp Glu	Glu Gly Cys Pro
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Val Cys Ser Ala	Ala Gln Phe	Pro Cys	Ala Arg Gly	Gln Cys Val Asp
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Leu Arg Leu Arg	Cys Asp Gly	Glu Ala	Asp Cys Gln	Asp Arg Ser Asp
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		Leu Met		Thr Lys Pro Pro
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Sor Asn Asn Sor		Cor Cor		
			_	Pro Val Ile Gly
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	Leu Phe Val	<del>-</del>	GIY Val Tyr	Phe Val Cys Gln
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Glu Tyr Val Ser	Gly Thr Pro	His Val	Pro Leu Asn	Phe Ile Ala Pro
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Gly Gly Ser Gln	His Gly Pro	Phe Thr	Gly Ile Ala	Cys Gly Lys Ser
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Leu Tyr Trp Ala Asp Ala Lys Leu Ser Phe Ile His Arg Ala Asn Leu
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Phe Ala Leu Thr Leu Ser Gly Asp Thr Leu Tyr Trp Thr Asp Trp Gln
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Thr Arg Ser Ile His Ala Cys Asn Lys Arg Thr Gly Gly Lys Arg Lys
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Glu Ile Leu Ser Ala Leu Tyr Ser Pro Met Asp Ile Gln Val Leu Ser
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Gln Glu Arg Gln Pro Phe Phe His Thr Arg Cys Glu Glu Asp Asn Gly
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Gly Trp Ser His Leu Cys Leu Leu Ser Pro Ser Glu Pro Phe Tyr Thr
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Cys Ala Cys Pro Thr Gly Val Gln Met Gln Asp Asn Gly Arg Thr Cys
Lys Ala Gly Ala Glu Glu Val Leu Leu Leu Ala Arg Arg Thr Asp Leu
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Arg Arg Ile Ser Leu Asp Thr Pro Asp Phe Thr Asp Ile Val Leu Gln
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Val Asp Asp Ile Arg His Ala Ile Ala Ile Asp Tyr Asp Pro Leu Glu
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Gly Tyr Val Tyr Trp Thr Asp Asp Glu Val Arg Ala Ile Arg Arg Ala
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                                        395
Tyr Leu Asp Gly Ser Gly Ala Gln Thr Leu Val Asn Thr Glu Ile Asn
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                                    410
Asp Pro Asp Gly Ile Ala Val Asp Trp Val Ala Arg Asn Leu Tyr Trp
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Thr Asp Thr Gly Thr Asp Arg Ile Glu Val Thr Arg Leu Asn Gly Thr
Ser Arg Lys Ile Leu Val Ser Glu Asp Leu Asp Glu Pro Arg Ala Ile
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Ala Leu His Pro Val Met Gly Leu Met Tyr Trp Thr Asp Trp Gly Glu
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                    470
Asn Pro Lys Ile Glu Cys Ala Asn Leu Asp Gly Gln Glu Arg Arg Val
Leu Val Asn Ala Ser Leu Gly Trp Pro Asn Gly Leu Ala Leu Asp Leu
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Gln Glu Gly Lys Leu Tyr Trp Gly Asp Ala Lys Thr Asp Lys Ile Glu
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Val Ile Asn Val Asp Gly Thr Lys Arg Arg Thr Leu Leu Glu Asp Lys
Leu Pro His Ile Phe Gly Phe Thr Leu Leu Gly Asp Phe Ile Tyr Trp
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Thr Asp Trp Gln Arg Arg Ser Ile Glu Arg Val His Lys Val Lys Ala
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                                    570
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Ser Arg Asp Val Ile Ile Asp Gln Leu Pro Asp Leu Met Gly Leu Lys
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Ala Val Asn Val Ala Lys Val Val Gly Thr Asn Pro Cys Ala Asp Arg
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Asn Gly Gly Cys Ser His Leu Cys Phe Phe Thr Pro His Ala Thr Arq
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Cys Gly Cys Pro Ile Gly Leu Glu Leu Ser Asp Met Lys Thr Cys
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Ile Val Pro Glu Ala Phe Leu Val Phe Thr Ser Arg Ala Ala Ile His
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                                    650
Arg Ile Ser Leu Glu Thr Asn Asn Asn Asp Val Ala Ile Pro Leu Thr
            660
                                665
Gly Val Lys Glu Ala Ser Ala Leu Asp Phe Asp Val Ser Asn Asn His
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Ile Tyr Trp Thr Asp Val Ser Leu Lys Asn Ile Ser Arg Ala Phe Met
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Asn Gly Ser Ser Val Glu His Val Val Glu Phe Gly Leu Asp Tyr Pro
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Glu Gly Met Ala Val Asp Trp Met Gly Lys Asn Leu Tyr Trp Ala Asp
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Thr Gly Thr Asn Arg Ile Glu Val Ala Arg Leu Asp Gly Gln Phe Arg
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                                745
Gln Val Leu Val Trp Arg Asp Leu Asp Asn Pro Arg Ser Leu Ala Leu
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Asp Pro Thr Lys Gly Tyr Ile Tyr Trp Thr Glu Trp Gly Gly Lys Pro
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Arg Ile Val Arg Ala Phe Met Asp Gly Thr Asn Cys Met Thr Leu Val
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                                        795
Asp Lys Val Gly Arg Ala Asn Asp Leu Thr Ile Asp Tyr Ala Asp Gln
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                                    810
Arg Leu Tyr Trp Thr Asp Leu Asp Thr Asn Met Ile Glu Ser Ser Asn
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                                825
Met Leu Gly Gln Glu Arg Val Val Ile Ala Asp Asp Leu Pro His Pro
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Phe Gly Leu Thr Gln Tyr Ser Asp Tyr Ile Tyr Trp Thr Asp Trp Asn
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Leu His Ser Ile Glu Arg Ala Asp Lys Thr Ser Gly Arg Asn Arg Thr
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Leu Ile Gln Gly His Leu Asp Phe Val Met Asp Ile Leu Val Phe His
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Ser Ser Arg Gln Asp Gly Leu Asn Asp Cys Met His Asn Asn Gly Gln
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Cys Gly Gln Leu Cys Leu Ala Ile Pro Gly Gly His Arg Cys Gly Cys
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Ala Ser His Tyr Thr Leu Asp Pro Ser Ser Arg Asn Cys Ser Pro Pro
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Thr Thr Phe Leu Leu Phe Ser Gln Lys Ser Ala Ile Ser Arg Met Ile
                    950
                                        955
Pro Asp Asp Gln His Ser Pro Asp Leu Ile Leu Pro Leu His Gly Leu
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                                    970
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5	ASN	vai	ьуs 980	АТА	iie	Asp	Tyr	985	Pro	Leu	Asp	Lys	990	IIe	Tyr
Trn	v-1	Asp		7 ~~	Cln	Λαn	Tlo		7~~	ח ז ת	Tara	7 an		<b>~1</b>	mb se
пр	val	995	GIY	Arg	GIII	ASII	100	_	Arg	AIA	nys	1005	_	GIĀ	THE
Gln	Pro	Phe	Val	Leu	Thr	Ser	Leu	Ser	Gln	Gly	Gln	Asn	Pro	Asp	Arq
	1010					1019				-	1020			-	J
Gln		His	7 an	T 011	802			т10	TT 220	C0*			T 0	Dho	III aces
		птъ	ASD	цец			Asp	TIE	ıyı			1111	ьец	Pne	_
1025					1030					1035					1040
Thr	Cys	Glu	Ala	Thr	Asn	Thr	Ile	Asn	Val	His	Arg	Leu	Ser	Gly	Glu
				1045	5				1050	)				105	5
Ala	Met	Gly	Val	Val	Len	Ara	Glv	Asp	Ara	Asp	Lvs	Pro	Ara	Δla	Tle
		1	1060			3	1	106			-1-		1070		
37-3	77-7	7			7	<b>a</b> 1	m			Dh.	m1	3			3
vaı	vai	Asn		GIU	Arg	GIY	_		Tyr	Pne	Thr			GIN	Asp
		1075					1080					1085			
Arg	Ala	Ala	Lys	Ile	Glu	Arg	Ala	Ala	Leu	Asp	Gly	Thr	Glu	Arg	Glu
	1090	)				1095	5				1100	)			
Val	Leu	Phe	Thr	Thr	Glv	Leu	Tle	Ara	Pro	Val	Δla	T.eu	Val	Val	Asp
1105					111(			3		1115			• • • •		1120
			a1	<b>T</b>			_		_			_	_	_	
ASII	Thr	Leu	GIY			Pne	Trp	vaı			Asp	Leu	гла	_	
				1125	5				1130	)				1139	5
Glu	Ser	Cys	Asp	Leu	Ser	Gly	Ala	Asn	Arg	Leu	Thr	Leu	Glu	Asp	Ala
			1140	)				1145	5				1150	)	
Asn	Ile	Val	Gln	Pro	Leu	Glv	Leu	Thr	Tle	Leu	Glv	Lvs	His	Leu	Tvr
		1155				0_1	1160				017	1165			- 7 -
/II.	<b>-1</b> -			<b>~</b> 1	~1 ·-	<b>673</b>			~3						=1
Trp		Asp	Arg	GIN	GIR			тте	GIU	Arg			ьys	Thr	Thr
	1170	)				1175	5				1180	)			
Gly	Asp	Lys	Arg	Thr	Arg	Ile	Gln	Gly	Arg	Val	Ala	His	Leu	Thr	Gly
1185					1190	)				1195	5				1200
	•								~ 3		Dho	Ser	Δla	uia	Dwo
		Ala	Val	Glu	Glu	Val	Ser	Leu	GLU	Glu				пты	PIO
		Ala	Val			Val	Ser	Leu			FIIC		nια		
Ile	His			1205	5				1210	)				1219	5
Ile	His	Ala Arg	Asp	1205 Asn	5			Ser	1210 His	)			Ala	1219 Lys	5
Ile Cys	His Ala	Arg	Asp 1220	1205 Asn )	Gly	Gly	Cys	Ser 1225	1210 His	) Ile	Cys	Ile	Ala 1230	1219 Lys )	Gly
Ile Cys	His Ala		Asp 1220	1205 Asn )	Gly	Gly	Cys	Ser 1225	1210 His	) Ile	Cys	Ile	Ala 1230	1219 Lys )	Gly
Ile Cys	His Ala	Arg	Asp 1220 Pro	1205 Asn )	Gly	Gly	Cys	Ser 1225 Pro	1210 His	) Ile	Cys	Ile	Ala 1230 Leu	1219 Lys )	Gly
Ile Cys Asp	His Ala Gly	Arg Thr 1235	Asp 1220 Pro	1205 Asn ) Arg	Gly Cys	Gly Ser	Cys Cys 1240	Ser 1225 Pro	1210 His Val	Ile His	Cys Leu	Ile Val 1245	Ala 1230 Leu	1219 Lys ) Leu	Gly Gln
Ile Cys Asp	His Ala Gly Leu	Arg Thr 1235 Leu	Asp 1220 Pro	1205 Asn ) Arg	Gly Cys	Gly Ser Glu	Cys Cys 1240 Pro	Ser 1225 Pro	1210 His Val	Ile His	Cys Leu Ser	Ile Val 1245 Pro	Ala 1230 Leu	1219 Lys ) Leu	Gly Gln
Ile Cys Asp Asn	His Ala Gly Leu 1250	Arg Thr 1235 Leu	Asp 1220 Pro Thr	1205 Asn ) Arg Cys	Gly Cys Gly	Gly Ser Glu 1255	Cys Cys 1240 Pro	Ser 1225 Pro ) Pro	1210 His Val Thr	Ile His Cys	Cys Leu Ser 1260	Ile Val 1245 Pro	Ala 1230 Leu S	1219 Lys ) Leu Gln	Gly Gln Phe
Ile Cys Asp Asn Ala	His Ala Gly Leu 1250 Cys	Arg Thr 1235 Leu Ala	Asp 1220 Pro Thr	Asn Arg Cys	Gly Cys Gly	Gly Ser Glu 1255 Ile	Cys Cys 1240 Pro Asp	Ser 1225 Pro ) Pro Cys	1210 His Val Thr	Ile His Cys Pro	Cys Leu Ser 1260 Gly	Ile Val 1245 Pro	Ala 1230 Leu S	1219 Lys ) Leu Gln	Gly Gln Phe Cys
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Cys Asp Asn Ala 1265 Asp Val Leu Glu Ser	His Ala Gly Leu 1250 Cys Gly Cys Arg Val 1330 Gly	Thr 1235 Leu Ala Phe Ser Leu 1315 Asp	Asp 1220 Pro Thr Thr Pro Ala 1300 Arg	Asn  Arg  Cys  Glu  1285  Ala  Cys  Asp	Gly Cys Glu 1270 Cys Gln Asp Ala Leu	Gly Ser Glu 1255 Ile Asp Phe Gly Ile 1335 Ile	Cys Cys 1240 Pro Asp Asp Pro Glu 1320 Cys	Ser 1225 Pro Pro Cys Gln Cys 1305 Ala Leu	1210 His Val Thr Ile Ser 1290 Ala Asp	Ile His Cys Pro 1275 Asp Arg Cys Asn	Cys Leu Ser 1260 Gly Glu Gly Gln Gln 1340 Asp	Val 1245 Pro Ala Glu Gln Asp 1325 Phe	Ala 1230 Leu Asp Trp Gly Cys 1310 Arg	Leu Gln Arg Cys 1295 Val Ser Cys	Gly Gln Phe Cys 1280 Pro Asp Asp Ala Asp
Ile Cys Asp Asn Ala 1265 Asp Val Leu Glu Ser 1345	His Ala Gly Leu 1250 Cys Gly Cys Arg Val 1330 Gly	Arg Thr 1235 Leu Ala Phe Ser Leu 1315 Asp Gln	Asp 1220 Pro Thr Thr Pro Ala 1300 Arg Cys	Asn Arg Cys Glu 1285 Ala Cys Asp Val	Gly Glu 1270 Cys Gln Asp Ala Leu 1350	Gly Ser Glu 1255 Ile Asp Phe Gly Ile 1335 Ile	Cys Cys 1240 Pro Asp Asp Pro Glu 1320 Cys Lys	Ser 1225 Pro Pro Cys Gln Cys 1305 Ala Leu	1210 His Val Thr Ile Ser 1290 Ala Asp Pro Gln	Ile His Cys Pro 1275 Asp Arg Cys Asn Cys 1355	Cys Leu Ser 1260 Gly Glu Gly Gln 1340 Asp	Val 1245 Pro Ala Glu Gln Asp 1325 Phe	Ala 1230 Leu Asp Trp Gly Cys 1310 Arg Arg	Lys Leu Gln Arg Cys 1295 Val Ser Cys	Gly Gln Phe Cys 1280 Pro Asp Asp Ala Asp 1360
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Gly	Gly	Ser	${\tt Gln}$	His	${\tt Gly}$	Pro	Phe	Thr	$\operatorname{Gly}$	Ile	Ala	Cys	Gly	Lys	Ser
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Met	Met	Ser	Ser	Val	Ser	Leu	Met	Gly	Gly	Arg	Gly	Gly	Val	${\tt Pro}$	Leu
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Tyr	Asp	Arg	Asn	His	Val	Thr	Gly	Ala	Ser	Ser	Ser	Ser	Ser	Ser	Ser
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Thr	Lys	Ala	Thr	Leu	Tyr	Pro	Pro	Ile	Leu	Asn	Pro	Pro	Pro	Ser	Pro
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				1525	5	Cys		Thr			Cys	Asp	Ser		
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Ala Ser	Pro	Pro Ser 1555 Asp	Thr 1540 Arg	1529 Thr ) Trp	Pro Lys	Cys	Ser Ser 1560 Pro	1545 Lys )	Asp Tyr	Val Tyr	Leu His	Asp 1565 Ser	1550 Leu	Asp ) Asn	Tyr Ser
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Ala Ser Asp Ser 1589	Pro Ala Ser 1570 Ala	Pro Ser 1555 Asp O	Thr 1540 Arg Pro	Thr Trp Tyr Ser	Pro Lys Pro Cys 1590	Cys Ala Pro 1575 Pro	Ser Ser 1560 Pro Pro	1545 Lys ) Pro Ser	Asp Tyr Thr	Val Tyr Pro Ala 1595 Cys	Leu His 1580 Thr	Asp 1565 Ser Glu	1550 Leu Gln Arg	Asp Asn Tyr Ser	Tyr Ser Leu Tyr 1600
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Ala Ser Asp Ser 1589 Phe	Pro Ala Ser 1570 Ala His	Pro Ser 1555 Asp O	Thr 1540 Arg Pro	1525 Thr ) Trp Tyr Ser	Pro Lys Pro Cys 1590	Cys Ala Pro 1575 Pro	Ser Ser 1560 Pro Pro	1545 Lys ) Pro Ser	Asp Tyr Thr Pro	Val Tyr Pro Ala 1595 Cys	Leu His 1580 Thr	Asp 1565 Ser Glu	1550 Leu Gln Arg	Asp Asn Tyr Ser	Tyr Ser Leu Tyr 1600
Ala Ser Asp Ser 1589 Phe	Pro Ala Ser 1570 Ala His	Pro Ser 1555 Asp Glu Leu	Thr 1540 Arg Pro	1525 Thr ) Trp Tyr Ser	Pro Lys Pro Cys 1590	Cys Ala Pro 1575 Pro	Ser Ser 1560 Pro Pro	1545 Lys ) Pro Ser	Asp Tyr Thr Pro	Val Tyr Pro Ala 1595 Cys	Leu His 1580 Thr	Asp 1565 Ser Glu	1550 Leu Gln Arg	Asp Asn Tyr Ser	Tyr Ser Leu Tyr 1600
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<213> Homo sapiens

## <400> 5

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agacctggga	ccagtctgtg	20

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tgcctgccca accagttccg gtgtgcgagc ggccagtgtg tcctcatcaa acagcagtgc 180
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